



International Partnership
for Hydrogen and Fuel Cells
in the Economy

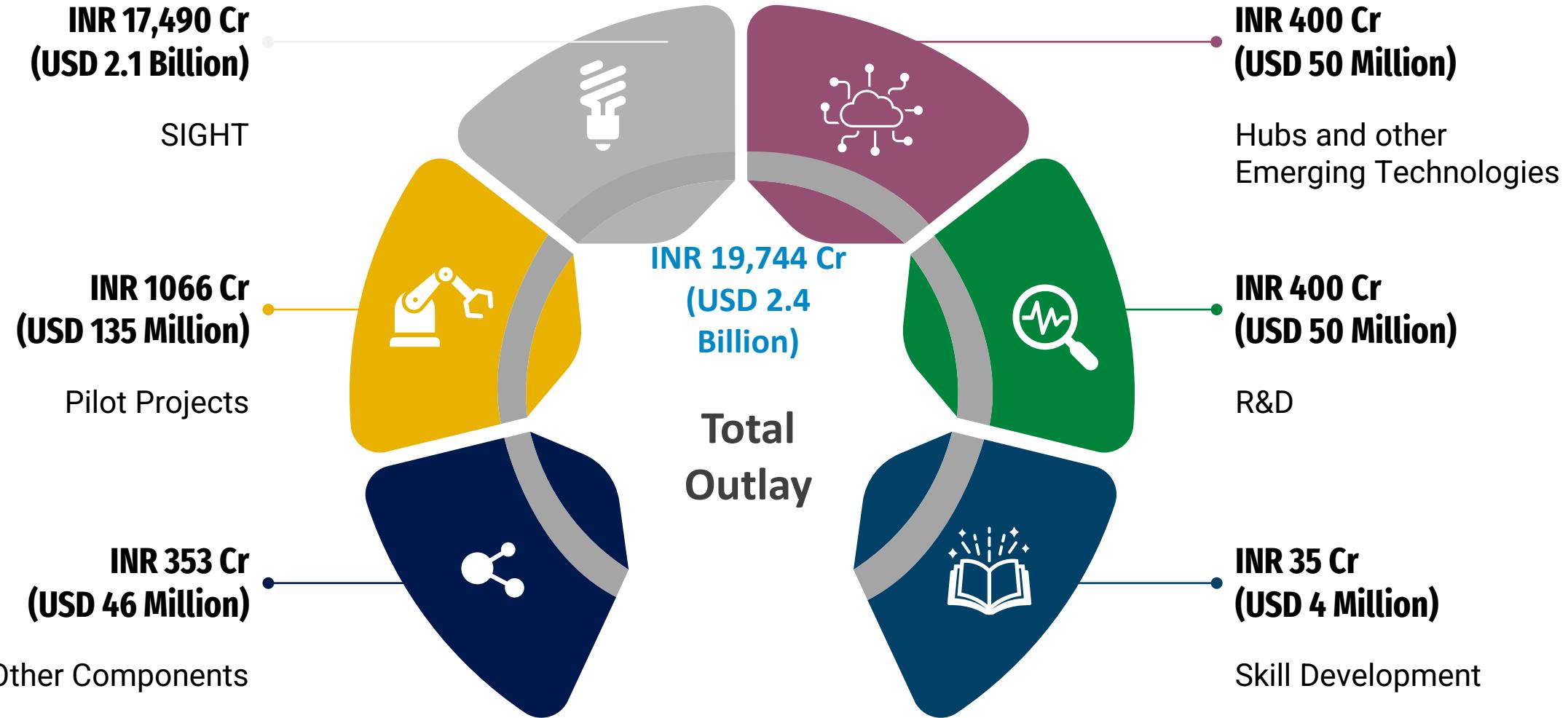
***INDIA* Update**

44th IPHE Steering Committee Meeting

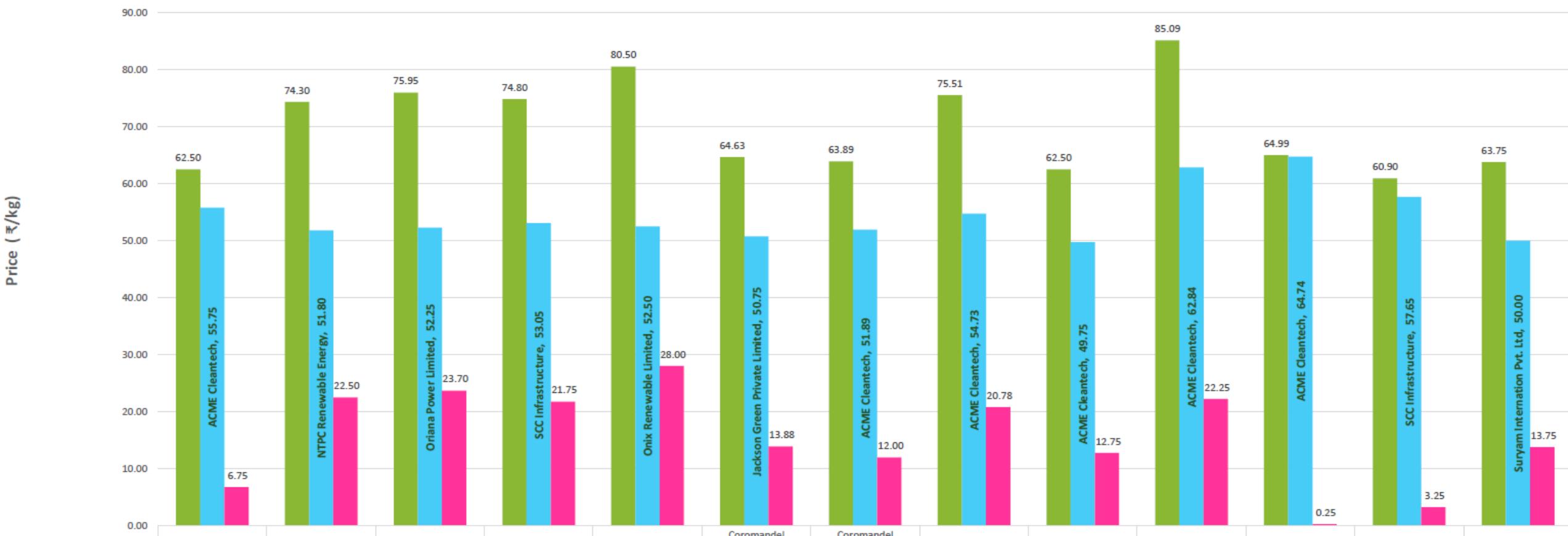
24 – 25 November 2025

Riyadh, Kingdom of Saudi Arabia

Budget allocation under NGHM



Snapshot of Green Ammonia SIGHT 2A e-Reverse Auction



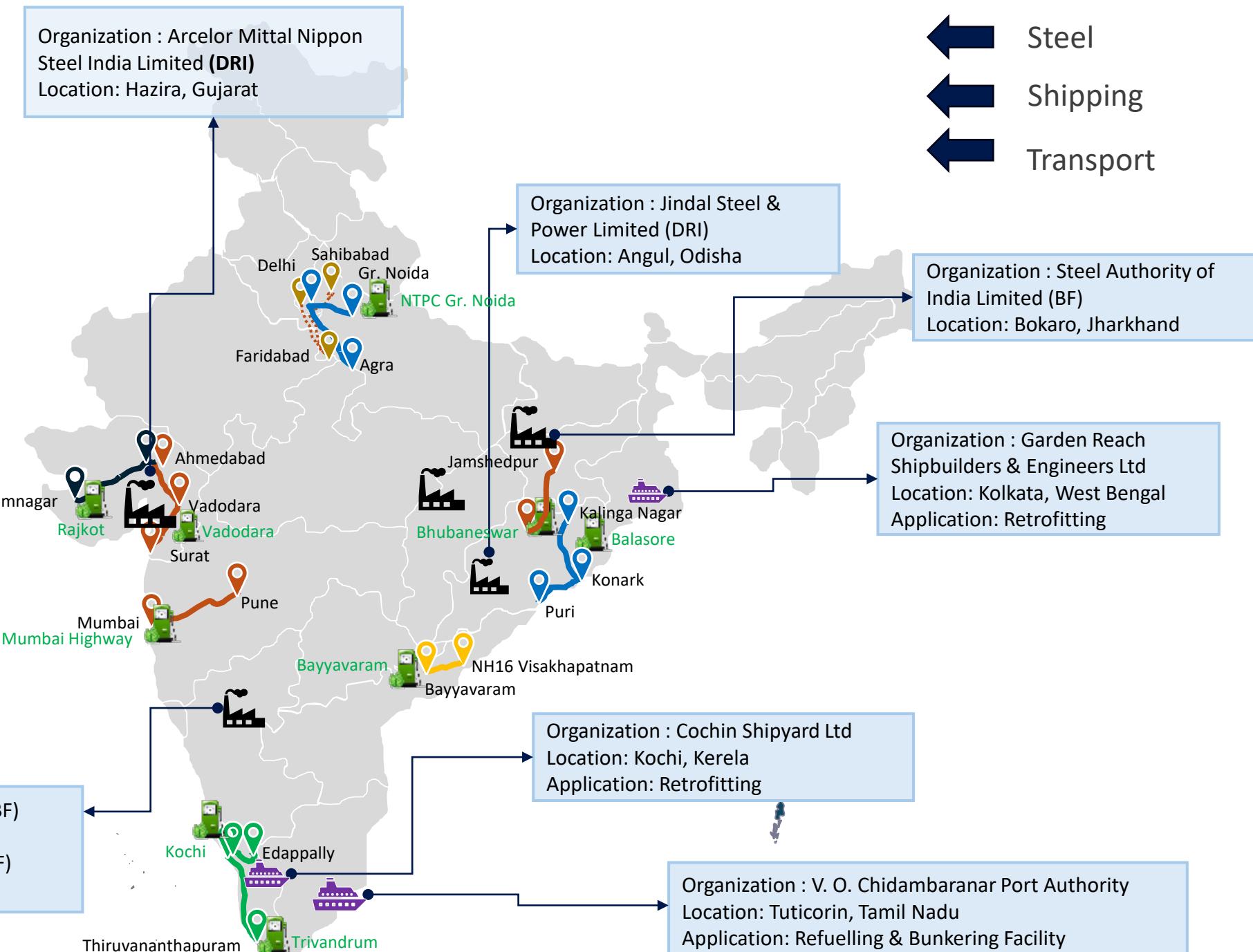
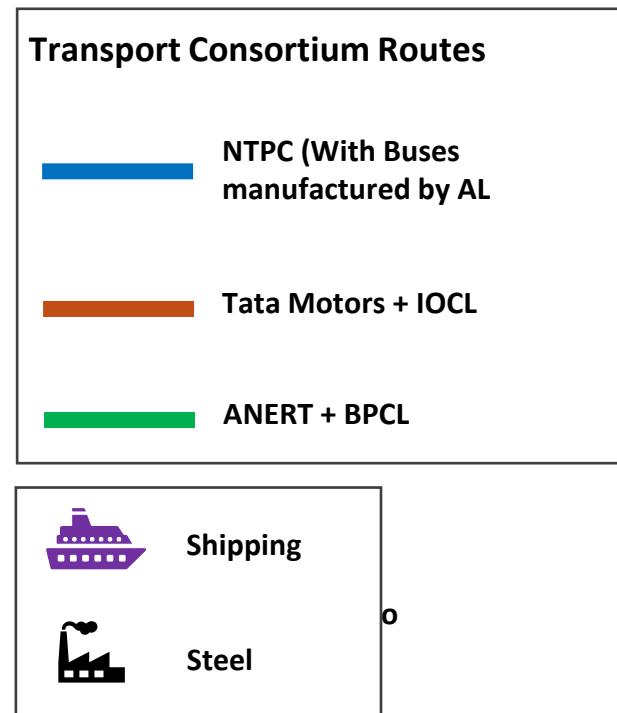
e-RA Starting Price (₹/kg)	62.50	74.30	75.95	74.80	80.50	64.63	63.89	75.51	62.50	85.09	64.99	60.90	63.75
Winning Price (₹/kg)	55.75	51.80	52.25	53.05	52.50	50.75	51.89	54.73	49.75	62.84	64.74	57.65	50.00
Price Reduction in eRA (₹/kg)	6.75	22.50	23.70	21.75	28.00	13.88	12.00	20.78	12.75	22.25	0.25	3.25	13.75

Announcements / New Initiatives **INDIA**



- Incentives have been awarded for 8,62,000 TPA of GH2 production and 3000 MW PA of domestic electrolyser manufacturing .
- Reverse auction for Green Ammonia tender for 724,000 TPA completed. Price of INR 53.27/Kg(~ USD 600/ton; Weighted mean) discovered.
- 5 pilot projects have been awarded to use hydrogen in steel sector
- 5 projects awarded for deploying **37 Hydrogen fuelled vehicles** (10 Buses & 27 Trucks) and **9 HRS** across **10 different routes**. **Trials are under progress.**
- 23 projects awarded for R&D across GH2 Production, Application and safety themes. 2nd round invited on 14th July 2025.
- As part of EUTTC collaboration, joint R&D proposals invited on 6th May 2025 from EU/ Indian research institutions on GH2 production from waste water.
- 5 projects have been awarded for developing testing facilities across GH2 value chain and second round invited.
- Revised scheme for pilot projects in biomass & Innovative technologies issued. Proposals invited from Start-ups for hydrogen innovation projects
- Four Hydrogen Valley Innovation Clusters (HVICs) sanctioned
- **Regulations, Codes and Standards:** 128 standards have been adopted/published

Pilot Projects under NGHM



Awarded Hydrogen Valley Innovation Clusters (HVICs)



Jodhpur HVIC

Location HVIC: IIT Jodhpur Campus

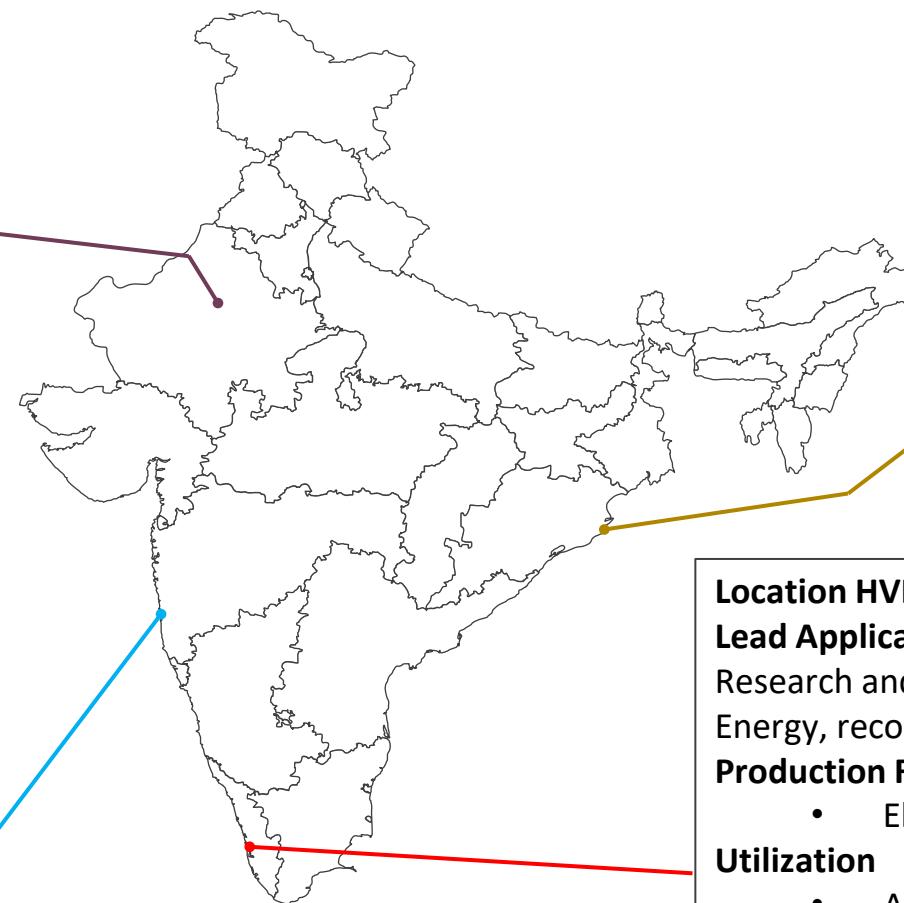
Lead Applicant: IIT Jodhpur

Production Route:

- Electrolysis

Utilization

- Transport - H2ICE
- Hydrogen Blending
- Ammonia Production



Bhubaneswar-HVIC

Location HVIC: IIT Bhubaneswar

Lead Applicant: IIT Bhubaneswar

Production Route:

- Electrolysis

Utilization

- DRI – Green Steel
- Transportation – Mining Truck

Pune-HVIC

Location HVIC: Pune-Mumbai region

Lead Applicant: CSIR – NCL

Production Route:

- Bio-ethanol
- Electrolysis

Utilization

- Fine/Specialty Chemicals
- Transport - Bus

Budget

Central Financial Assistance : INR 169.89 Cr/ USD 22 M

Industry/consortium : INR 315.43 Cr/ USD 40 M

Total Project Cost: INR 485.32 Cr/ USD 62 M

ANERT-HVIC

Location HVIC: Kochi

Lead Applicant: ANERT (Agency for New and Renewable Energy Research and Technology; Kerala State Government Agency for Energy, recognized by MNRE)

Production Route:

- Electrolysis

Utilization

- Ammonia
- City Gas Blending
- Transportation – Road and Waterways

Examples of Lessons Learned and Impact *India*



Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
Pilot projects in Transport, Shipping and Steel Sector	<ul style="list-style-type: none"> i. Long term viability of routes ii. Steel requires much more R&D and tech evolution iii. Robust monitoring framework required iv. Choice of reliable partners is crucial
Guidelines for Implementation of SIGHT programme <ul style="list-style-type: none"> • Component - I: Electrolyzer Manufacturing • Component -II: Green Hydrogen (Mode 1) 	<ul style="list-style-type: none"> i. Incentive based on performance, not price ii. Maximizing indigenous electrolyser manufacturing iii. Encourage smaller players/startups iv. Keep multiple routes for production open
<ul style="list-style-type: none"> • SIGHT Mode 2A (aggregation model for Green Ammonia) • SIGHT Mode 2B (aggregation model for Green Hydrogen) 	<ul style="list-style-type: none"> i. Demand aggregation -> better price discovery ii. Simplified tender procedures, no one-one negotiation iii. De-risking investment is crucial to low prices iv. Payment security mechanism

Thank you



International Partnership
for Hydrogen and Fuel Cells
in the Economy

National Green Hydrogen Mission Overview



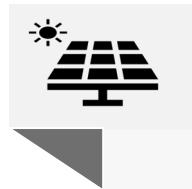
India Launched National Green Hydrogen Mission (NGHM) in January 2023 with following targets to be achieved by 2030



At least
5 MMT GH₂ Annual
Production



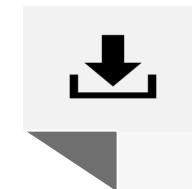
60-100 GW
Electrolyser Capacity



125 GW RE
Capacity for GH2 Generation



50 MMT
Emissions Averted



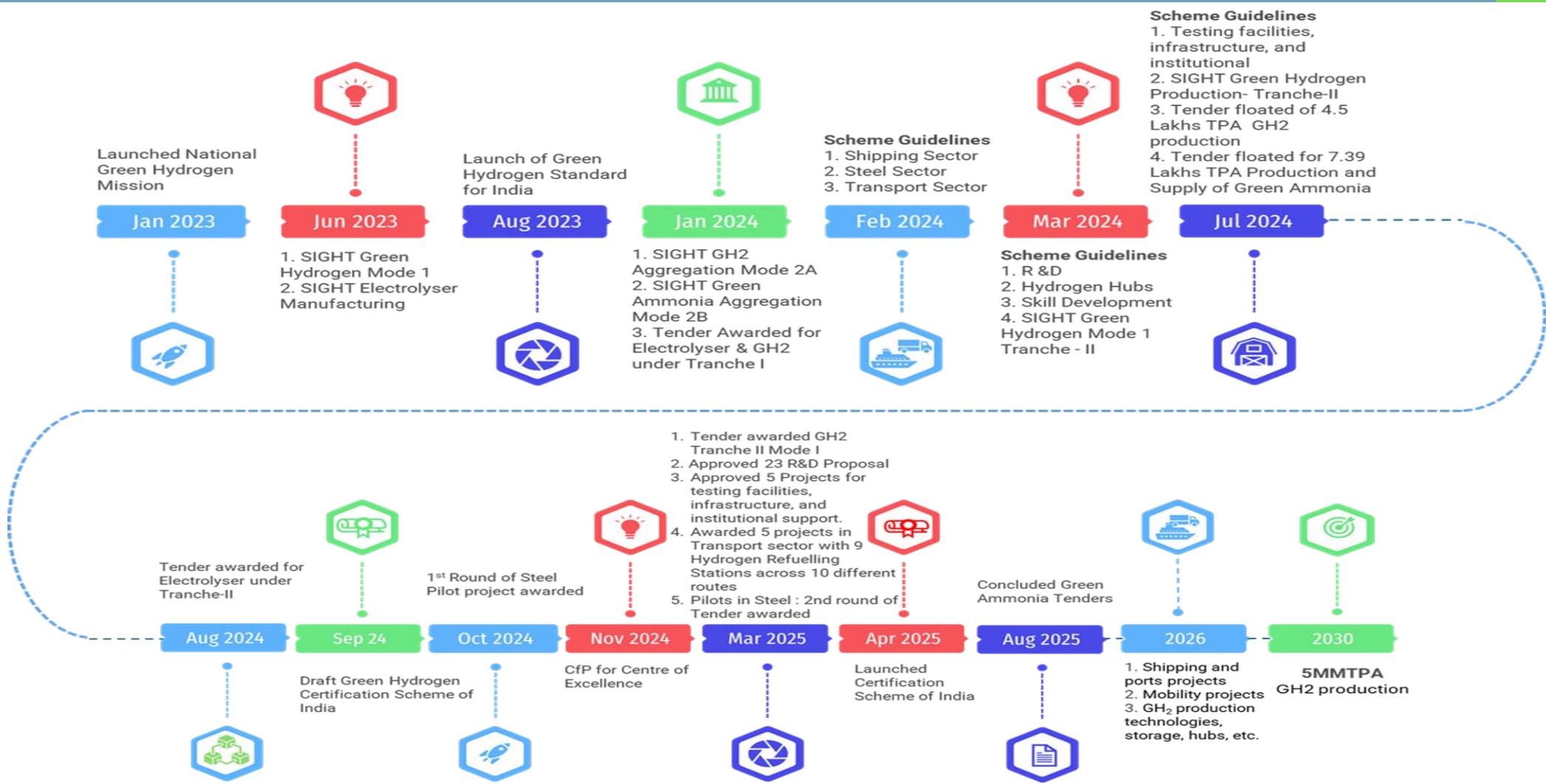
INR 1 Lakh Crore
(USD 12.5 Billion)
Import Savings



INR 8 Lakh Crores
(USD 100 Billion)
Investment

Creation of 6 Lakh Jobs
(0.6 Million)

Timeline of NGHM Initiatives



Status of Deployments

- **Green Ammonia aggregation:** The Reverse auction for Green Ammonia tender under SIGHT 2A tender with total capacity of tender 724,000 TPA is completed. Price of INR 53.27/Kg(~USD 600/ton) (Weighted mean) has been discovered
- **Green Hydrogen aggregation:** 20,000 TPA for Green Hydrogen generation units have been awarded by refineries
- About **2.55 MMTPA** of Green Ammonia production for export and about **0.3 MMTPA** for domestic consumption tied up by producers

Leading Government Initiatives

- Implementation of various **pilot projects in steel, shipping and mobility sector**
- Funding of **Testing facilities, Infrastructure, and Institutional support**
- **R&D** in Green Hydrogen domain
- Development of **Regulations, Codes and Standards**
- Creation of **Green Hydrogen Hubs and Valleys**
- **Skill and Capacity Building**

Goals or Focus Areas

- **60-100 GW** Electrolyser Capacity
- **50 MMT CO₂** Emissions to be averted
- **Import Savings** of INR 1 Lakh Crore (USD 12.5 Billion)
- **Investment** of INR 8 Lakh Crores (USD 100 Billion)
- Creation of **6 Lakh jobs (0.6 Million)**

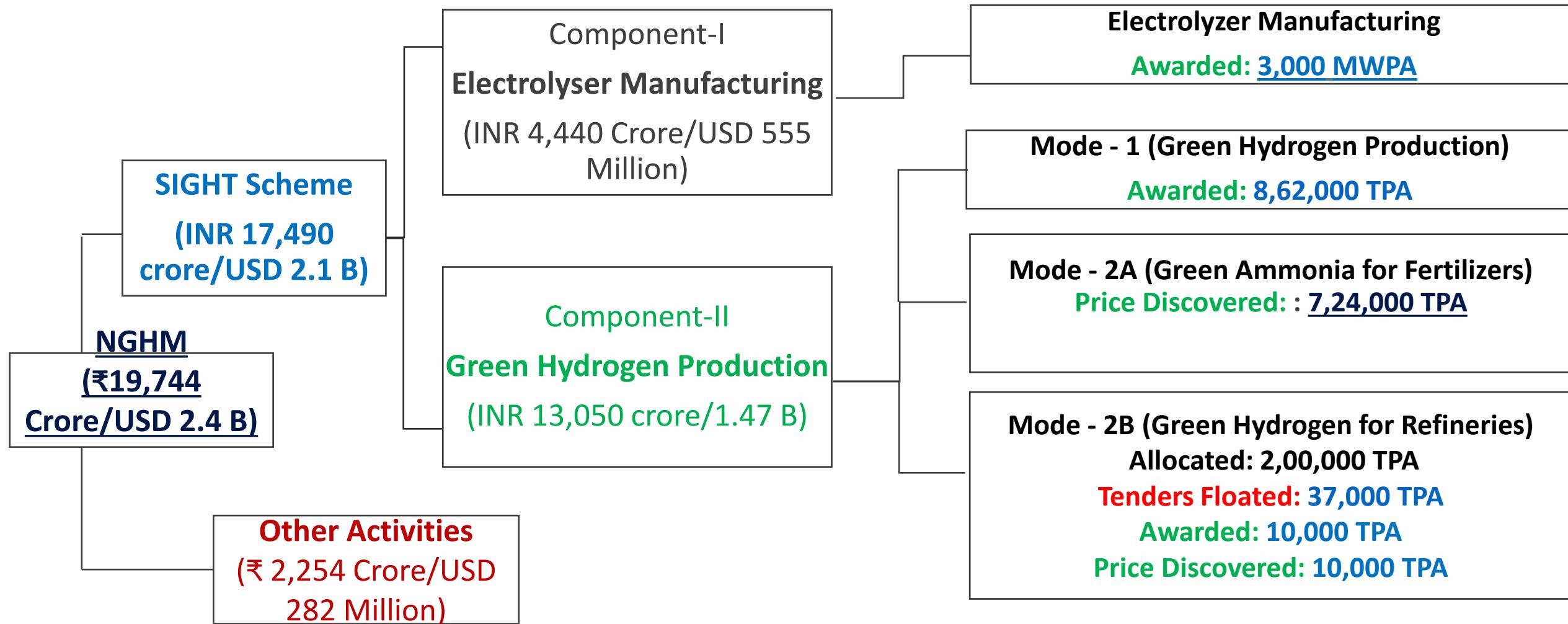
Deployment Goals

5 MMTPA Green Hydrogen Production by 2030

Funding

**INR 19,744 Cr
(USD 2.4 Billion)**

Announcements / New Initiatives **INDIA**



Outlay: INR 455 Crore (USD 57 M)

Timeline: 5 years (till 2029-30) ➔

Scheme Implementing Agency (SIA): MECON Limited (under Ministry of Steel)

Technologies under development:

- **Scheme A :** Pilot project to produce DRI using 100 % Hydrogen using NEW vertical Shaft
- **Scheme B :** Use of hydrogen in existing Blast Furnace to reduce coal/coke consumption
- **Scheme C :** Injection of Hydrogen in existing vertical shaft DRI production to partially substitute the Natural Gas or other reducing gas

Status:

- 5 projects awarded (around INR 131.4 Crore/ USD 17 M);
- The above projects will be commissioned between October 2026 and December 2027.
- DPR submitted to SIA by: SAIL (Scheme B) and JSPL (Scheme C)
- EoI floated for new projects on 2nd Aug 2025

Pilot Projects – Transport Sector



Outlay: INR 496 Crore (USD 62 M)

Timeline: 3 years (till 2025-26) 

Scheme Implementing Agency (SIA): Automotive Research Association of India (ARAI)

Status:

- **5 projects** awarded (around INR 208 Crore) for deploying **37 Hydrogen fuelled vehicles** (10 Buses and 27 Trucks) and **9 Hydrogen Refuelling Stations** across **10 different routes**

1. Greater Noida – Delhi – Agra	6. Thiruvananthapuram – Kochi
2. Bhubaneshwar – Konark – Puri	7. Kochi – Edappally
3. Ahmedabad – Vadodara – Surat	8. Jamnagar – Ahmedabad
4. Sahibabad – Faridabad – Delhi	9. NH-16 Visakhapatnam – Bayyavaram
5. Pune – Mumbai	10. Jamshedpur – Kalinga Nagar

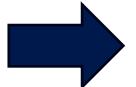
- Tata Motors has launched the trials of hydrogen-powered heavy-duty trucks on 4th March 2025
- H2-FCEV Bus received at NPTC, for Greater Noida–Delhi–Agra route on in July

Pilot Projects – Shipping Sector



Total Outlay: INR 115 Crore (USD 15 M)

Timeline: 2 years (till 2025-26)



- **Component A: Retrofitting of Vessels (Outlay INR 80 crore (USD 10 M))**
 - **Scheme Implementing Agency (SIA):** Shipping Corporation of India (SCI)
 - It has been decided to acquire methanol based (dual fuel capability) new ships..
 - The price bids for 2 Nos. new building PSVs capable of running on Green Methanol is invited. Expected completion of the project, 3 years from the signing of contract.
- **Component B: Establishment of Bunkering and Refueling Facility of GH2 (Outlay INR 35 Cr)**
 - **Scheme Implementing Agency (SIA):** V.O. Chidambaranar Port Authority
 - DPR prepared by VOCPA for development of bunkering and refuelling facility with 750m3 Green Methanol bunkering, as pilot project at VOCPA. Project would be completed by January 2026.
 - Work Awarded on 18.08.2025

R&D Projects

